

1 **SECTION 8-02, ROADSIDE PLANTING**

2 **December 2, 2002**

3 This section is revised to read:

4
5 **SECTION 8-02, ROADSIDE RESTORATION**

6
7 **8-02.1 Description**

8 This work shall consist of furnishing and placing topsoil and soil amendments, and
9 furnishing and planting trees, whips, shrubs, ground covers, cuttings, fascines, live
10 stakes, live poles, rhizomes, tubers, seedlings, erosion control seeding, fertilizing, and
11 mulching, and soil bioengineering in accordance with these Specifications and as
12 shown in the Plans or as directed by the Engineer.

13
14 Trees, whips, shrubs, ground covers, cuttings, live stakes, live poles, rhizomes, tubers,
15 rootstock, and seedlings will hereinafter be referred to collectively as "plants" or "plant
16 material."

17
18 **8-02.2 Materials**

19 Materials shall meet the requirements of the following sections:

20

21	Soil	9-14.1
22	Seed	9-14.2
23	Fertilizer	9-14.3
24	Mulch and Amendments	9-14.4
25	Erosion Control Blanket	9-14.5
26	Plant Materials	9-14.6
27	Stakes, Guys, and Wrapping	9-14.7
28	Irrigation Water	9-25.2

29

30 Botanical identification and nomenclature of plant materials shall be based on
31 descriptions by Hitchcock and Cronquist in "Flora of the Pacific Northwest". Botanical
32 identification and nomenclature of plant material not found in Flora shall be based on
33 Bailey in "Hortus Third" or superseding editions and amendments or as referenced in
34 the plans.

35
36 **8-02.3 Construction Requirements**

37
38 **8-02.3(1) Responsibility During Construction**

39 The Contractor shall ensure adequate and proper care of all plant material and work
40 done on this project until all plant establishment periods required by the contract are
41 complete or until physical completion of the project, whichever is last. Existing
42 vegetation shall not be disturbed unless required by the Contract or approved by the
43 Engineer.

44
45 Adequate and proper care shall include, but is not limited to, keeping all plant material in
46 a healthy, growing condition by watering, cultivating, pruning, and spraying. Plant
47 material crowns, runners, and branches shall be kept free of mulch at all times. This
48 work shall include keeping the planted areas free from insect infestation, weeds or
49 unwanted vegetation, litter, and other debris along with retaining the finished grades
50 and mulch in a neat uniform condition.
51

1 The Contractor shall have sole responsibility for the maintenance and appearance of
2 the roadside restoration.

3 4 **8-02.3(2) Roadside Work Plan**

5 Before starting any work described in Sections 8-02 and 8-03, the Contractor shall
6 submit a roadside work plan for approval by the Engineer. The roadside work plan shall
7 define the work necessary to provide all contract requirements, including: plant area
8 preparation, seeding, planting, plant replacement, irrigation, and weed control in
9 narrative form.

10
11 The Roadside Work Plan shall also include the following:

12 13 **Progress Schedule**

14 In accordance with Section 1-08.3, the Progress Schedule shall include the
15 planned time periods for work necessary to provide all contract requirements
16 covered in Sections 8-01, 8-02, and 8-03. Where appropriate, notes on the
17 schedule shall indicate the calendar dates during which these activities must occur.

18 19 **Weed Control Plan**

20 The Weed Control Plan shall be submitted and approved prior to starting any work
21 defined in Section 8-02.3(2).

22 23 **Plant Establishment Plan**

24 The Plant Establishment Plan shall be prepared in accordance with Section 8-
25 02.3(13), submitted and approved prior to initial planting acceptance in accordance
26 with Section 8-02.3(12).

27
28 An emergency contact person for the Contractor shall also be listed. Should any
29 part of the roadside work plan become unworkable at any time, the Contractor shall
30 submit, and receive approval of a revised plan prior to proceeding with further work.

31
32 The weed control plan shall show the scheduling of all weed control measures
33 required under the Contract including, hand weeding, rototilling, applications of
34 herbicides, noxious weed control, mowing, and shoulder slope weed control. Target
35 weeds and unwanted vegetation to be removed (no live top growth or roots) shall
36 be identified and listed in the weed control plan.

37
38 The plan shall be prepared and signed by a licensed Commercial Pest Control
39 Consultant when chemical pesticides are proposed. The plan shall include
40 methods of weed control; dates of weed control operations; and the name,
41 application rate, and Material Safety Data sheets of all proposed herbicides. In
42 addition, the Contractor shall furnish the Engineer with a copy of the current
43 product label for each pesticide and spray adjuvant to be used. These product
44 labels shall be submitted with the weed control plan for approval.

45
46 No on-site soil placement, grading, weed control, irrigation, or planting work shall
47 begin until the plan is approved. Upon approval of the roadside work plan by the
48 Engineer, the Contractor shall proceed in accordance with the approved plan.

49 50 **8-02.3(2)A Chemical Pesticides**

51 Application of chemical pesticides shall be in accordance with the label
52 recommendations, the Washington State Department of Ecology, local sensitive area

ordinances, and Washington State Department of Agriculture laws and regulations. The applicator shall be licensed by the State of Washington as a Commercial Applicator or Commercial Operator with additional endorsements as required by the Special Provisions or the proposed weed control plan. The Contractor shall furnish the Engineer evidence that all operators are licensed with appropriate endorsements, and that the pesticide used is registered for use by the Washington State Department of Agriculture. The Contractor shall furnish the Engineer a copy of the product label and Material Safety Data Sheet (MSDS) for each pesticide to be used. All chemicals shall be delivered to the job site in the original containers. The licensed applicator or operator shall complete a Commercial Pesticide Application Record (DOT Form 540-509) each day the pesticide is applied, and furnish a copy to the Engineer by the following business day.

The Contractor shall use extreme care to ensure confinement of the chemicals within the areas designated. The use of spray chemical pesticides shall require the use of antidrift and activating agents, and a spray pattern indicator unless otherwise allowed by the Engineer.

The Contractor shall assume all responsibility for rendering any area unsatisfactory for planting by reason of chemical application. Damage to adjacent areas, either on or off the highway right of way, shall be repaired to the satisfaction of the Engineer or the property owner, and the cost of such repair shall be borne by the Contractor.

8-02.3(2)B Weed Control

Those weeds specified as noxious by the Washington State Department of Agriculture, the local Weed District, or the County Noxious Weed Control Board shall be controlled on the project in accordance with the weed control plan or as directed by the Engineer.

During the life of the contract, the Contractor shall apply a nonselective residual herbicide to the area between the edge of paved shoulders and a point shown in the Plans or as designated by the Engineer. The Contractor shall make additional applications when ordered by the Engineer. A nonselective herbicide recommended for use adjacent to shrub and grass areas, and in ditches shall be used.

8-02.3(3) Planting Area Weed Control

All planting areas shall be prepared so that they are weed and debris free at the time of planting and until completion of the project. The planting areas shall include the entire ground surface, regardless of cover, all planting beds, areas around plants, and those areas shown in the Plans.

At no time during the life of the Contract shall the Contractor allow weeds or unwanted vegetation to reach seed stage.

All applications of post-emergent herbicides shall be made while green and growing tissue is present. Should unwanted vegetation reach the seed stage, in violation of these Specifications, the Contractor shall physically remove and bag the seed heads. All physically removed vegetation and seed heads shall be disposed of off site at no cost to the Contracting Agency.

8-02.3(4) Topsoil

Topsoil shall be evenly spread over the specified areas to the depth shown in the Plans or as otherwise ordered by the Engineer. The soil shall be cultivated to a depth of 1 foot

1 or as specified in the Special Provisions or the Plans. After the topsoil has been spread,
2 all large clods, hard lumps, and rocks 3 inches in diameter and larger, and litter shall be
3 raked up, removed, and disposed of by the Contractor.
4

5 Topsoil shall not be placed when the ground or topsoil is frozen, excessively wet, or in
6 the opinion of the Engineer in a condition detrimental to the work.
7

8 **8-02.3(4)A Topsoil Type A**

9 Topsoil Type A shall be as specified in the Special Provisions.
10

11 **8-02.3(4)B Topsoil Type B**

12 Topsoil Type B shall be native topsoil taken from within the project limits and shall meet
13 the requirements of Section 9-14.1(2).
14

15 Topsoil Type B shall be taken from areas designated by the Engineer to the designated
16 depth and stockpiled at locations that will not interfere with the construction of the
17 project, as approved by the Engineer. Areas beyond the slope stakes shall be disturbed
18 as little as possible in the above operations.
19

20 When topsoil Type B is specified, it shall be the Contractor's responsibility to perform
21 the excavation operations in such a manner that sufficient material is set aside to satisfy
22 the needs of the project.
23

24 Upon physical completion of the work, topsoil Type B remaining and not required for
25 use on the project shall be disposed of by the Contractor at no expense to the
26 Contracting Agency and to the satisfaction of the Engineer.
27

28 Should a shortage of topsoil Type B occur, and the Contractor has wasted or otherwise
29 disposed of topsoil material, the Contractor shall furnish topsoil Type C at no expense to
30 the Contracting Agency.
31

32 Topsoil Type B will not be considered as selected material, as defined in Section
33 2-03.3(10), and the conditions of said section shall not apply.
34

35 Materials taken from roadway excavation, borrow, stripping, or other excavation items,
36 and utilized for topsoil, will not be deducted from the pay quantities for the respective
37 items.
38

39 **8-02.3(4)C Topsoil Type C**

40 Topsoil Type C shall be native topsoil obtained from a source provided by the
41 Contractor outside of the Contracting Agency-owned right of way. Topsoil Type C shall
42 meet the requirements of Section 8-02.3(4)B and Section 9-14.1(2).
43

44 **8-02.3(5) Planting Area Preparation**

45 The work involved in preparing planting areas shall be conducted so the flow line in
46 drainage channels are maintained. Material displaced by the Contractor's operations,
47 which interferes with drainage, shall be removed from the channel and disposed of as
48 approved by the Engineer. The planting area shall be weed free with no top growth or
49 live roots before any soil work begins.
50

51 Before planting and final grading takes place, the area shall be cultivated when
52 specified in the Plans or the Special Provisions.

The areas shall be brought to a uniform finished grade, 1 inch, or the specified depth of mulch plus 1 inch, below walks, curbs, junction and valve boxes, catch basins, and driveways, unless otherwise specified. All excess material and debris, stumps, and rocks larger than 3 inches, shall be removed and disposed of off the project site or as approved by the Engineer.

8-02.3(6) Soil Amendments

Soil amendments of the type, quality, and quantities specified shall be applied where shown in the Plans or as specified in the Special Provisions.

8-02.3(7) Layout of Planting

All location layout and staking shall be the responsibility of the Contractor, subject to approval of the Engineer before planting of each area begins.

The Engineer will make only the field measurements necessary to calculate and verify quantities for payment.

All trees to be planted in mowable grass areas shall be located a minimum of 10 feet from the edge of planting beds, other trees, fence lines, and bottom of ditches unless otherwise specified.

Tree locations shown in the Plans shall be considered approximate unless shown with stationing and offset distance. In irrigated areas, trees shall be located so their trunk is a minimum of 1/3 of the spray radius away from the nearest sprinkler head.

Unless otherwise shown, planting beds located adjacent to roadways shall begin at the shoulder subgrade.

8-02.3(8) Planting

No plant material shall be planted until it has been inspected and approved for planting by the Engineer. Rejected material shall be removed from the project site.

Under no circumstances will planting during freezing weather or in frozen ground be permitted. All planting shall be accomplished during the following periods:

1. Nonirrigated Plant Material
September 15 to March 31.
2. Irrigated Plant Material
In irrigated areas, plant material shall not be installed until the irrigation system is fully operational.

Plants shall not be placed in areas that are below the finished grade.

Planting hole sizes for plant material shall be in accordance with the details shown in the Plans. Any glazed surface of the planting hole shall be removed by hand methods.

Plant material supplied in containers shall not be removed from the containers until the time of planting at the planting location. Roots of bare root stock shall not be bunched, curled, twisted, or unreasonably bent when placed in the planting hole. All bare root plant material shall be dormant at the time of planting.

Fascines shall be installed in accordance with the requirements of Section 8-01.3(10).

After placing balled and burlapped plants, all inorganic, plastic, or treated burlap and all string or wire lacing shall be completely removed. A burlap-lined wire basket container may be used in lieu of laced burlap. The top 1/2 of the basket shall be removed after the plant is positioned in the planting hole.

The plant material shall be handled in such a manner that the root systems are kept covered and damp at all times. The root systems of all bare root plant material shall be dipped in a slurry of silt and water immediately prior to planting. The root systems of container plant material shall be moist at the time of planting. In their final position, the plants shall have the same relationship to the finished grade as when growing in the nursery or container. After planting, the backfill material and root ball shall be thoroughly watered in within 24 hours.

The Contractor shall provide and apply an antidesiccant substance to all coniferous plant material and to all deciduous trees (when in leaf) before the plants leave the nursery. The Contractor shall supply a letter of certification that the antidesiccant has been applied in accordance with the manufacturer's recommendations.

8-02.3(9) Pruning, Staking, Guying, and Wrapping

Plants shall be pruned at the time of planting, if needed, to remove minor broken or damaged twigs, branches or roots. Pruning shall be done with a sharp tool and shall be done in such a manner as to retain or to encourage natural growth characteristics of the plants.

When the lowest branch on a 2-inch caliper or larger deciduous tree occurs at 3 feet or more from ground level, the trunks shall be wrapped with a tree wrapping material. Tree wrap may be self-adhering or secured using tape. Staples will not be allowed.

Each tree shall be staked or guyed before completion of the backfilling in accordance with the details shown in the Plans.

All staking, guying, and wrapping shall be completely removed at the end of the first year of plant establishment, unless otherwise approved by the Engineer.

8-02.3(10) Fertilizers

Fertilizers shall be applied in the form specified in the Special Provisions. Application procedures shall be in accordance with the manufacturer's recommendations or as specified in the Special Provisions. The Contractor shall submit for approval a guaranteed fertilizer analysis label for the selected product.

8-02.3(11) Bark or Wood Chip Mulch

Bark or wood chip mulch of the type and depth specified shall be applied where shown in the Plans or as specified in the Special Provisions. Any contamination of the mulch due to the Contractor's operations shall be corrected to its former condition at the Contractor's expense. Mulch shall be feathered to the base of the plant and 1 inch below the top of junction and valve boxes, curbs, and pavement edges. All plant crowns shall be free of mulch. Mulch placed to a thickness greater than specified shall be at no additional cost to the Contracting Agency.

8-02.3(12) Completion of Initial Planting

Upon completion of the initial planting within a designated area, the Engineer will make an inspection of all plant material and notify the Contractor, in writing, of any replacements or corrective action necessary to meet the Contract Provisions. The Contractor shall replace all materials rejected or missing and correct unsatisfactory conditions.

Completion of the initial planting within a designated area includes the following:

1. A minimum of 95 percent of each of the plant material categories, as described in Section 8-02.1, shall be in a healthy and vigorous growing condition and shall be installed as shown in the Contract Plans.
2. Planting Area cleanup.
3. Repairs completed for the entire project, including but not limited to full operation of the irrigation system, complete mulch coverage, and all weeds controlled.
4. Approval of plant establishment plan.

8-02.3(13) Plant Establishment

Plant establishment shall consist of caring for all plants planted on the project and caring for the planting areas within the project limits. The provisions of Section 1-07.13(2) and 1-07.13(3) do not apply to this section

The Contractor shall submit a first year plant establishment plan, for approval by the Engineer. The Plan shall show the proposed scheduling of activities, materials, and equipment to be utilized for the first year plant establishment. The Plan shall include the management of the irrigation system, when applicable. Should the plan become unworkable at any time during the first year plant establishment, the Contractor shall submit a revised plan.

The first year of plant establishment shall begin immediately upon written notification from the Engineer of the acceptance of initial planting for the entire project. The first year plant establishment period shall be a minimum of one calendar year.

During the first year plant establishment period, it shall be the Contractor's responsibility to perform all work necessary to ensure the resumption and continued growth of the transplanted material. This care shall include, but not be limited to, labor and materials necessary for removal of foreign, dead, or rejected plant material, maintaining a weed-free condition, and the replacement of all unsatisfactory plant material planted under the contract. If plants are stolen or damaged by the acts of others, the Contracting Agency will pay invoice cost only for the replacement plants with no mark-up and the Contractor will be responsible for the labor to install the replacement plants.

The Contractor shall meet with the Engineer for the purpose of joint inspection of the planting material on the closest working day to the first day of the month. The Contractor shall correct all conditions unsatisfactory to the Engineer within a 10-day period immediately following the inspection. Failure to comply with corrective steps as outlined by the Engineer shall constitute justification for the Contracting Agency to take corrective steps and to deduct all costs thereof from any monies due the Contractor. At

1 the end of the plant establishment period, plants that do not show normal growth shall
2 be replaced.

3
4 All automatic irrigation systems shall be operated fully automatic during the plant
5 establishment period and until final acceptance of the contract. Payment for water used
6 to water in plants, or hand watering of plant material or lawn areas unless otherwise
7 specified, is the responsibility of the contractor during the first year plant establishment
8 period.

9
10 Subsequent year plant establishment periods, when included in the contract, shall begin
11 immediately at the completion of the preceding year's plant establishment period. Each
12 subsequent year plant establishment period shall be one full calendar year in duration.

13
14 During the ____ year plant establishment periods, whichever may apply, the Contractor
15 shall maintain all plant establishment areas in a condition that is free of unwanted
16 vegetation. Weeds and unwanted vegetation shall not be allowed to reach seed stage.
17 The Contractor shall perform all other work necessary to the continued healthy and
18 vigorous growth of all plant material as ordered by the Engineer. The Contractor shall
19 perform this work on a force account basis at the direction of the Engineer.

20 21 **8-02.3(14) Plant Replacement**

22 The Contractor shall be responsible for growing or providing enough plants for
23 replacement of all plant material rejected through first year plant establishment. All
24 rejected plant material shall be replaced at dates approved by the Engineer.

25
26 All replacement plants shall be of the same species and quality as the plants they
27 replace. Plants may vary in size reflecting one season of growth should the Contractor
28 elect to hold plant material under nursery conditions for an additional year to serve as
29 replacement plants.

30 31 **8-02.3(15) Erosion Control Seeding, Fertilizing, and Mulching**

32 33 **8-02.3(15)A Preparation For Final Application**

34 Areas to be cultivated are shown in the Plans or specified in the Special Provisions.
35 The areas shall be cultivated to the depths specified to provide a reasonably firm but
36 friable seedbed. Cultivation shall take place no sooner than two weeks prior to seeding.

37
38 All areas to be seeded, including excavated slopes shall be compacted and prepared
39 unless otherwise specified or ordered by the Engineer. Unless seed is covered with soil
40 immediately after seed application, a cleated roller, crawler tractor, or similar equipment,
41 approved by the Engineer that forms longitudinal depressions at least 2 inches deep
42 shall be used for compaction and preparation of the surface to be seeded. The entire
43 area shall be uniformly covered with longitudinal depressions formed perpendicular to
44 the natural flow of water on the slope unless otherwise approved by the Engineer. The
45 soil shall be conditioned with sufficient water so the longitudinal depressions remain in
46 the soil surface until completion of the seeding. The area shall be compacted within
47 three weeks prior to seeding. Prior to seeding, the finished grade of the soil shall be 1
48 inch, or the specified depth of mulch, below the top of all curbs, catch basins, junction
49 and valve boxes, walks, driveways, and other structures.

1 **8-02.3(15)B Seeding and Fertilizing**

2 Seed and fertilizer shall be placed at the rate, mix and analysis specified in the Special
3 Provisions or as designated by the Engineer.
4

5 The Contractor shall notify the Engineer not less than 24 hours in advance of any
6 seeding operation and shall not begin the work until areas prepared or designated for
7 seeding have been approved. Following the Engineer's approval, seeding of the
8 approved slopes shall begin immediately.
9

10 Seeding shall not be done during windy weather or when the ground is frozen,
11 excessively wet, or otherwise untillable. Seed and fertilizer may be sown by one of the
12 following methods:
13

- 14 1. An approved hydro seeder that utilizes water as the carrying agent, and
15 maintains continuous agitation through paddle blades. It shall have an
16 operating capacity sufficient to agitate, suspend, and mix into a homogeneous
17 slurry the specified amount of seed and water or other material. Distribution
18 and discharge lines shall be large enough to prevent stoppage and shall be
19 equipped with a set of hydraulic discharge spray nozzles that will provide a
20 uniform distribution of the slurry.
21
- 22 2. Approved blower equipment with an adjustable disseminating device capable
23 of maintaining a constant, measured rate of material discharge that will ensure
24 an even distribution of seed at the rates specified.
25
- 26 3. Helicopters properly equipped for aerial seeding.
27
- 28 4. Approved power-drawn drills or seeders.
29
- 30 5. Areas in which the above methods are impractical may be seeded by approved
31 hand methods.
32

33 When seeding by hand, the seed shall be incorporated into the top 1/4 inch of soil by
34 hand raking or other method that is approved by the Engineer.
35

36 The seed shall have a tracer added to visibly aid uniform application. This tracer shall
37 not be harmful to plant and animal life. If wood cellulose fiber is used as a tracer, the
38 application rate shall not exceed 250 pounds per acre. Hand seeding operations are
39 excluded from this requirement.
40

41 Seed and fertilizer may be applied in one application provided that the fertilizer is placed
42 in the hydro seeder tank no more than one hour prior to application.
43

44 **8-02.3(15)C Liming**

45 Agricultural lime shall be applied at the rates specified in the Special Provisions. The
46 method of application shall be in conformance with all air and water pollution regulations
47 and shall be approved by the Engineer.
48

49 **8-02.3(15)D Mulching**

50 Mulch of the type specified in the Special Provisions shall be furnished, hauled, and
51 evenly applied at the rates indicated and shall be spread on seeded areas within 48
52 hours after seeding unless otherwise specified.

Distribution of straw mulch material shall be by means of an approved mulch spreader that utilizes forced air to blow mulch material on seeded areas. In spreading straw mulch, the spreader shall not cut or break the straw into short stalks.

Wood cellulose fiber may be applied with seed and fertilizer West of the summit of the Cascade Range. East of the summit of the Cascade Range, seed and fertilizer shall be applied in one application followed by the application of wood cellulose fiber. Wood cellulose fiber used as mulch shall be suitable for application with a hydro seeder as specified in Section 8-02.3(15)B.

Areas not accessible by mulching equipment shall be mulched by approved hand methods.

Mulch sprayed on signs or sign structures shall be removed the same day.

8-02.3(15)E Soil Binder or Tacking Agent

When the proposal includes a pay item for soil binders and tacking agents, they shall be applied in accordance with the manufacturer's recommended requirements. Tackifiers used as a tie-down for seed and mulch shall be applied in quantities sufficient to equal the retention properties of guar when applied at the rate of 60 pounds per acre.

8-02.3(15)F Dates for Application of Final Seed, Fertilizer, and Mulch

Unless otherwise approved by the Engineer, the final application of seeding, fertilizing, and mulching of slopes shall be performed during the following periods:

West of the summit of the Cascade Range - March 1 to May 15 and August 15 to October 1. Where contract timing is appropriate, seeding, fertilizing, and mulching shall be accomplished during the fall period listed above. Written permission to seed after October 1 will only be given when physical completion of the project is imminent and the environmental conditions are conducive to satisfactory growth.

East of the summit of the Cascade Range - August 15 to November 15. Seeding, fertilizing, and mulching shall be accomplished during this fall period only.

All roadway excavation and embankment slopes, including excavation and embankment slopes that are partially completed to grade, shall be prepared and seeded during the first available seeding window.

When environmental conditions are not conducive to satisfactory results, the Engineer may suspend work until such time that the desired results are likely to be obtained.

The Contractor will be responsible to ensure a healthy stand of grass, otherwise, the Contractor will, restore eroded areas, clean up eroded materials, and reseed, fertilize and mulch, at no additional cost to the Contracting Agency.

8-02.3(15)G Protection and Care of Seeded Areas

In addition to the requirements of Section 1-07.13(1), the contractor shall be responsible for performing the following duties:

1. Protect all areas involved against vehicle and pedestrian traffic by use of approved warning signs and barricades.

2. Areas, which have been damaged through any cause prior to final inspection, and areas failing to receive a uniform application at the specified rate, shall be reseeded, refertilized, and remulched at the Contractor's expense.
3. Seeded areas within the planting area shall be considered part of the planting area. Weeds within the seeded areas shall be controlled in accordance with Section 8-02.3(3).

8-02.3(15)H Inspection

Inspection of any area will be made upon completion of seeding, fertilizing, or mulching. The work in any area will not be measured for payment until a uniform distribution of the materials is accomplished at the specified rate. Areas not receiving a uniform application of seed, fertilizer, or mulch at the specified rate, as determined by the Engineer, shall be reseeded, refertilized, or remulched at the Contractor's expense prior to payment.

8-02.3(15)I Mowing

When the proposal contains the bid item "Mowing" or mowing areas are defined, the Contractor shall mow all grass growing areas and slopes 2.5 (H) to 1 (V) or flatter except for naturally wooded and undergrowth areas. Trimming around traffic facilities, structures, planting areas, or other features extending above ground shall be accomplished preceding or simultaneously with each mowing by use of power-driven or hand-operated machinery and tools to achieve a neat and uniform appearance.

Each mowing shall be considered as one coverage of all grass areas to be mowed within a defined area. Prospective bidders shall verify the estimated acreage, the topography, irregularity of the area, slopes involved, and access limitations to determine the appropriate equipment to use for mowing. Equipment and tools shall be provided such as, but not limited to, tractor-operated rotary or flail-type grass cutting machines and tools or other approved equipment. Power driven equipment shall not cause ruts or deformation of improved areas. Sickie type grass cutters will be permitted only on slopes of drainage ditches, berms, or other rough areas. The equipment and tools shall be in good repair at all times and maintained so that a clean, sharp cut of the grass will result at all times. The Engineer will determine the actual number of mowings. The height of mowing will be 4 to 6 inches or as designated in the Plans or in the Special Provisions.

Mowing equipment shall be operated and equipped with suitable guards to prevent throwing rocks or debris onto the traveled way or off the right of way. Equipment, which pulls or rips the grass or damages the turf in any manner will not be permitted. The Engineer will be the sole judge of the adequacy of the equipment, safeguards, and methods of use. The Contractor will not be required to collect or remove clippings from the project except on the traveled way, shoulder, walkway, or other areas designated by the Engineer.

8-02.3(16) Lawn Installation

In irrigated areas, lawn installation shall not begin until the irrigation system is fully operational.

Seed mix and rate of application shall be as specified in the Special Provisions.

1 Unless otherwise approved by the Engineer, seeded lawn installation shall be
2 performed during the following periods of at the location shown:

3
4 West of the summit of the Cascade Range - March 1 to October 1.

5 East of the summit of the Cascade Range - April 15 to October 1.
6

7 The Contractor shall have the option of sodding in lieu of seeding for lawn installation at
8 no additional expense to the Contracting Agency. Seeding in lieu of sodding will not be
9 allowed.

10
11 Topsoil for seeded or sodded lawns shall be placed at the depth and locations shown in
12 the Plans. The topsoil shall be cultivated to the specified depth, raked to a smooth even
13 grade without low areas to trap water and compacted, all as approved by the Engineer.

14
15 Sod strips shall be placed within 48 hours of being cut. Placement shall be without voids
16 and have the end joints staggered. The sod shall be rolled with a smooth roller
17 following placement.

18
19 Barriers shall be erected, with warning signs where necessary, to preclude pedestrian
20 traffic access to the newly placed lawn during the establishment period.
21

22 **8-02.3(17) Lawn Establishment**

23 Lawn establishment shall consist of caring for all new lawn areas within the limits of the
24 project.

25
26 The lawn establishment period shall begin immediately after the lawn planting has been
27 accepted by the Engineer and shall extend to the end of four mowings or 20 working
28 days which ever is longer. The mowings shall be done in accordance with 8-02.3(18)1.

29
30 During the lawn establishment period, it shall be the Contractor's responsibility to
31 ensure the continuing healthy growth of the turf. This care shall include labor and
32 materials necessary to keep the project in a presentable condition, including but not
33 limited to, removal of litter, mowing, trimming, removal of grass clippings, edging,
34 fertilization, insecticide and fungicide applications, weed control, watering, repairing the
35 irrigation system, and repair and reseeding any and all damaged areas. Lawn mowing
36 shall be performed once each week, or as ordered by the Engineer, during the lawn
37 establishment period with no additional compensation.

38
39 Temporary barriers shall be removed only on written permission from the Engineer.

40
41 All work performed under lawn establishment shall comply with established turf
42 management practices.

43
44 Acceptance of lawn planting as specified shall be based on a uniform stand of grass
45 and a uniform grade at the time of final inspection. Areas that are bare or have a poor
46 stand of grass, and areas not having a uniform grade through any cause before final
47 inspection, shall be recultivated, regraded, reseeded, or resodded and refertilized as
48 specified at no additional cost to the Contracting Agency.
49

1 **8-02.3(18) Lawn Mowing**

2 Lawn mowing shall begin immediately after the lawn establishment period has been
3 accepted by the Engineer and shall extend to the end of the contract or the first year
4 plant establishment, whichever is last.

5
6 The Contractor shall accomplish the following minimum requirements:

- 7
8 1. Mowing, trimming, and edging shall be done as often as conditions dictate.
9 Maximum height of lawn shall not exceed 3 inches. The cutting height shall be
10 2 inches. Cuttings, trimmings, and edgings shall be disposed of off the project
11 site. When the Engineer approves the use of a mulching mower, trimmings
12 may be left in place.
13
14 2. Watering shall be as often as conditions dictate depending on weather and soil
15 conditions.
16
17 3. Provide fertilizer, weed control, and other measures as necessary to maintain
18 a healthy stand of grass.
19

20 **8-02.4 Measurement**

21 Topsoil, mulch and soil amendments will be measured by the cubic yard in the haul
22 conveyance at the point of delivery.

23
24 Live fascine will be measured by the linear foot.

25
26 Brush layer will be measured by the linear foot.

27
28 Live pole will be measured per each.

29
30 Live stake row will be measured by the linear foot

31
32 Live brush mattress will be measured by the surface square yard.

33
34 Compost will be measured by the cubic yard in the haul conveyance at the point of
35 delivery.

36
37 The quantity of topsoil Type B used on the project will not be deducted from the total
38 quantity of roadway excavation, borrow, strippings, or other excavation for which haul is
39 being paid.

40
41 The pay quantities for plant materials will be determined by count of the number of
42 satisfactory plants in each category accepted by the Engineer.

43
44 Weed barrier mat will be measured per each

45
46 Fertilizer will be measured in pounds

47
48 Seeding, fertilizing, liming, mulching, mowing, and soil binder or tacking agent will be
49 measured in acres by ground slope measurement or through the use of design data.

50
51 Seeding and fertilizing by hand will be measured by the square yard. No adjustment in
52 area size will be made for the vegetation free zone around each plant.

Water will be measured in accordance with Section 2-07.4. Measurement will be made of only that water hauled in tank trucks or similar equipment.

Seeded lawn, sod installations, and lawn mowing will be measured along the ground slope and computed in square yards of actual lawn completed, established, and accepted.

8-02.5 Payment

Payment will be made in accordance with Section 1-04.1, for each of the following listed bid items that are included in the proposal:

“Topsoil Type _____”, per cubic yard.
The unit contract price per cubic yard for “Topsoil Type _____” shall be full pay for providing the source of material for topsoil Type A and C, for excavating, loading, hauling, intermediate windrowing, stockpiling, weed control and removal, placing, spreading, processing, cultivating, and compacting topsoil Type A, Type B, and Type C.

“Plant Selection _____”, per each.
“PSIPE _____”, per each. (PSIPE is Plant Selection Including Plant Establishment.)
The unit contract price for “Plant Selection _____”, per each, and “PSIPE _____”, per each, shall be full pay for all materials, labor, tools, equipment, and supplies necessary for weed control within the planting area, planting area preparation, fine grading, planting, cultivating, and cleanup for the particular items called for in the Plans.

As the plants that include plant establishment are obtained, propagated, and grown, partial payments shall be made as follows after inspection by the Engineer:

Payment of 5 percent of the unit contract price, per each, when the plant materials have been contracted, propagated, and are growing under nursery conditions. The Contractor shall provide the Engineer with certification that the plant material has been procured or contracted for delivery to the project for planting within the time limits of the project. The certification shall state the location, quantity, and size of all material.

Payment shall be increased to 15 percent of the unit contract price, per each, upon completion of the initial weed control work.

Payment shall be increased to 60 percent of the unit contract price per each for the contracted plant material in a designated unit area when planted.

Payment shall be increased to 80 percent of the unit contract price per each for contracted plant material at the completion of the initial planting.

Payment shall be increased to the appropriate percentage upon accomplishment of the following phases of plant establishment.

3 months after completion of initial planting	85%
6 months after completion of initial planting	90%
Completion of 1st year plant establishment	100%

As the plants that do not include plant establishment are obtained, propagated, and grown, partial payments shall be made as follows:

Payment of 15 percent of the unit contract price per each when the plant materials have been contracted, propagated, and are growing under nursery conditions. The Contractor shall provide the Engineer with certification that the plant material has been procured or contracted for delivery to the project for planting within the time limits of the project. The certification shall state the location, quantity, and size of all material.

Payment shall be increased to 90 percent of the unit contract price per each for contracted plant material at the completion of the initial planting.

Payment shall be increased to 100 percent at the physical completion of the contract.

All partial payments shall be limited to the actual number of healthy vigorous plants that meet the stage requirements, limited to plan quantity. Previous partial payments made for materials rejected or missing will be deducted from future payments due the Contractor.

"Live Fascine", per linear foot.

"Live Pole", per each.

"Live Stake Row", per linear foot.

"Live Brush Mattress", per square yard.

"Plant Establishment - ____ Year", will be paid in accordance with Section 1-09.6.

"Brush Layer", per linear foot.

"Weed Barrier Mat", per each

The unit contract price per each for "Weed Barrier Mat" shall be full pay to provide and install the weed barrier mat as specified, to maintain the mat in place throughout the plant establishment period, and to remove the mat when ordered by the Engineer.

"Compost Type____", per cubic yard.

The unit contract price per cubic yard for "Compost Type ____" shall be full pay for furnishing and spreading the compost onto the existing soil.

"Fertilizer", per pound.

"Weed Control", will be paid in accordance with Section 1-09.6.

"Pesticide Application", will be paid in accordance with Section 1-09.6.

For the purpose of providing a common proposal for all bidders, the Contracting Agency entered an amount for "Plant Establishment - ____ Year", "Weed Control", and "Pesticide Application" in the proposal to become a part of the total bid by the Contractor.

"Soil Amendment", per cubic yard.

"Bark or Wood Chip Mulch", per cubic yard.

"Water", per M Gal.

"Seeding", per acre.

"Seeding and Fertilizing", per acre.

1	"Seeding, Fertilizing, and Mulching", per acre.	
2	"Seeding and Mulching", per acre.	
3	"Seeding and Fertilizing by Hand", per square yard.	
4	"Fertilizing", per acre.	
5	"Second Application of Fertilizer", per acre.	
6	"Liming", per acre.	
7	"Mulching", per acre.	
8	"Soil Binder or Tacking Agent", per acre.	
9	"Mowing", per acre.	
10	"Seeded Lawn Installation", per square yard.	
11	"Sod Installation", per square yard.	
12	"Lawn Mowing", per square yard.	
13	The unit contract price per square yard for "Seeded Lawn Installation" or "Sod	
14	Installation" shall be full pay for all costs necessary for weed control within the	
15	seeding area, to prepare the area, plant or sod the lawn, erect barriers, and	
16	establish lawn areas and for furnishing all labor, tools, equipment, and materials	
17	necessary to complete the work as specified and shall be paid in the following	
18	sequence for healthy, vigorous lawn:	
19		
20	Completion of Lawn Planting	60 percent of individual areas
21	Mid Lawn Establishment	
22	(after 2 mowings)	85 percent of individual areas
23	Completion of Lawn Establishment	100 percent of individual areas
24	(after 4 mowings)	